

Common Snapping Turtle

MISSOURI'S TURTLES

by Tom R. Johnson

Herpetologist

Copyright 1982 by the Conservation Commission of the State of Missouri URTLES and tortoises represent the oldest living group of reptiles on earth. Reptiles are a class of animals which also includes crocodiles and alligators, lizards and snakes. Turtles are generally hard-shelled animals, are known from fossils as far back as the Triassic Period—over 200 million years ago—and have changed little since they became established. There are currently more than 230 known species of turtles and tortoises. Missouri has a total of 17 species of turtles, with several subspecies or geographic races, which represent four different families.

The turtles of Missouri can be divided into three of the following groups: hard-shelled aquatic turtles, softshell aquatic turtles and hard-shelled land turtles. The hard-shelled aquatic group has the largest number of species and includes some of the smallest species as well as the largest freshwater turtle. The softshell aquatic group is represented by two species. The hard-shelled land dwelling turtles are represented by two species of box turtles; sometimes called "tortoises," they are actually closely related to pond turtles (cooters, sliders and painted turtles).

Turtle shells have two main parts: upper and lower sections, technically known as the *carapace* and *plastron*,



This young box turtle is one of two species of hard-shelled land dwelling turtles.

respectively. The shell of most species is composed of bony plates covered by a layer of horny scales called *scutes*. Softshells, however, have reduced bony plates, which are covered by tough skin instead of scutes.

Aquatic turtles have a variety of habitat requirements depending on the species. Some, like the redeared slider, can live in nearly any natural or manmade body of water—as long as there is ample aquatic vegetation for both food and security, and suitable basking sites. The alligator snapping turtle, a declining species and the largest species in Missouri, lives in large rivers where adequate food (mostly fish) and cover (deep holes with root snags) can be found. The various map turtles do well in headwater streams and the clear, cool rivers of the Ozarks where the turtles can find their favorite foods: snails, naiads and crayfish. Life on the land has allowed box turtles to utilize a diversified diet: insects, earthworms, land snails, mushrooms, berries and young shoots of various plants. Turtles do not have teeth; they were lost eons ago through the process of evolution. Both the upper and lower jaws are covered with a sharp-edged beak, which, because the lower jaw fits inside the upper jaw, allows turtles to use their jaws like scissors to bite off bits of food.

All turtles lay eggs on land. Females are particular about where they lay and bury their eggs and may travel long distances overland to find a suitable location. Most turtles select well drained, sandy or loose soil to deposit their eggs, and the site usually faces south or southeast. Turtle eggs may be hard- or soft-shelled, round or elongated, depending on the species. Stinkpots, mud turtles and softshells lay hard-shelled eggs (containing a large amount of calcium in the egg shell). Other species lay soft, leathery-shelled eggs with a proportionately lower amount of calcium in the shell. The largest species of turtles all lay spherical eggs: alligator snapping turtle, common snapping turtle and softshells. All the rest lay elongated eggs. Turtle eggs either hatch in late summer or early fall, or the young turtles may remain in the egg or nest all winter and emerge in the spring.



These Map Turtle eggs are on a bank along the Big Piney River. All turtles lay eggs on land.

Common Snapping Turtle



Photos by Author

Alligator Snapping Turtle Macroclemys temmincki

This is the largest species of freshwater turtle in the world. The alligator snapping turtle can be distinguished from the common snapping turtle by the large head and pronounced hooked beak. There is a prominent row of keels on the upper shell. Coloration of the head, limbs and upper shell is dark brown; skin on the neck and other areas may be vellowish-brown. Adult alligator snapping turtles range in upper shell length from 15 to 26 inches (38 to 66 cm), and may weigh from 35 to 150 pounds (16 to 80 kg; the record weight is 219 pounds, 99.3 kg). This species eats mostly fish and has an unusual ability to lure fish to its mouth. The tongue of the alligator snapping turtle has a special tip which resembles a worm and the turtle uses it to attract fish close enough to capture and eat. Preferred habitat of this species includes deep, muddy pools of large rivers, deep sloughs and oxbow lakes. This large reptile has declined in the waters of Missouri and is now considered a rare species. It is unlawful to capture or kill the alligator snapping turtle in this state.

Missouri Distribution: Occurs in the southern, southeastern and eastern sections of the state.

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Common Snapping Turtle Chelydra serpentina serpentina

This is a common turtle of Missouri and one of the most abundant turtles in the eastern half of the United States. Adult common snapping turtles range in upper shell length from 8 to 12 inches (20 to 30 cm), and weigh from 10 to 35 pounds (4.5 to 17 kg). This aquatic species is normally gray-brown in color, but the upper shell is often covered with mud or algae. Common snapping turtles inhabit a wide variety of aquatic habitats: farm ponds, streams, rivers, swamps and lakes. Contrary to popular belief, this turtle is more a scavenger than a predator and feeds on both animal matter and aquatic plants. This turtle is economically important because large numbers are captured and eaten by people. In Missouri, the common snapping turtle is considered a game species; check the Wildlife Code of Missouri for current regulations concerning this turtle.

Missouri Distribution: Statewide.



Alligator Snapping Turtle



Illinois Mud Turtle

Kinosternon flavescens spooneri

This is a small, dark-colored, semi-aquatic turtle with a restricted range and is considered an endangered species in Missouri. General coloration is dark brown to black. There is some yellow on the chin and neck and along the edge of the upper shell. The lower shell is normally yellow with some brown coloration along the scute seams. Adult Illinois mud turtles range in upper shell length from 4 to 5 inches (10 to 12.5 cm). The Illinois mud turtle prefers a sandy habitat and spends as much time on land as in the water. Aquatic habitat includes marshes, oxbow lakes and flooded fields. It spends the winter as well as the hot months of summer buried in the sand on land. It is presumed to eat a variety of aquatic animals and some plants. A close relative of this turtle, the yellow mud turtle, Kinosternon flavescens flavescens (not pictured), may occur in a few counties in southwestern Missouri.

Missouri Distribution: The Illinois mud turtle is protected as an endangered species in this state and is restricted to a few marshes in northeastern Missouri.



Illinois Mud Turtle





Mississippi Mud Turtle



Mississippi Mud Turtle Kinosternon subrubrum hippocrepis

A small, dark-colored turtle of the swamps of southeastern Missouri, the Mississippi mud turtle is normally dark brown or black. The lower shell is normally yellow with a rich mottling of brown. There are usually two wide and irregular yellow stripes along each side of the head and neck. Adult Mississippi mud turtles range in upper shell length from 3 to $4\frac{3}{4}$ inches (7.5 to 12 cm). This species may be found in or near swamps, sloughs, oxbow lakes and canals. It is most often observed in shallow water and seems to shun flowing rivers. It eats a wide variety of aquatic animals and some plants.

Missouri Distribution: The Mississippi mud turtle is restricted to the counties of the Mississippi lowlands of southeastern Missouri.



Stinkpot







Cooter Chrysemys concinna/Chrysemys floridana complex

Local Name: Slider

A large aquatic turtle with a proportionately small, blunt head. General coloration is an olive-brown upper shell with numerous concentric yellow lines. The head and limbs are normally dark brown or black with many yellow lines. The lower shell is usually plain yellow, or it may have some faint gray markings on the forward section. Adult cooters range in upper shell length from 9 to 12 inches (20 to 30.5 cm). During the spring and summer, a considerable amount of time is spent basking in the sun on logs. The cooter is most abundant in Missouri's rivers and sloughs, but has also taken up residence in some of our state's large reservoirs. Aquatic plants make up the bulk of this species' food, but some aquatic insects, snails and crayfish are occasionally eaten.

Missouri Distribution: The cooter is presumed to occur throughout the southern third of the state.

Stinkpot Sternotherus odoratus

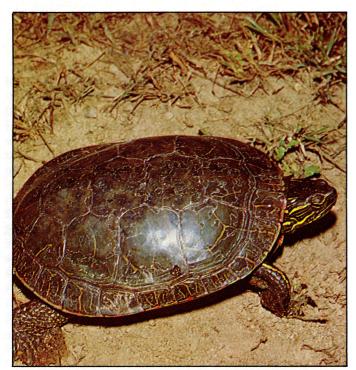
This is Missouri's smallest species of turtle and one of the world's smallest turtles. The stinkpot is a darkcolored turtle with a domed upper shell and reduced lower shell (see insert). General coloration is black or dark brown; the lower shell is yellow with some brown mottling. There are normally two thin, yellow stripes on each side of the head and neck. Adult stinkpots range in upper shell length from $3\frac{1}{4}$ to $4\frac{1}{2}$ inches (8 to 11.5 cm). The name "stinkpot" refers to the odor given off by this species when captured. The odor is produced by musk glands located in the skin just below the upper shell along the sides. Stinkpots may be found in a variety of aquatic habitats: streams, rivers, sloughs, swamps and large lakes. In Missouri, this species is most abundant in Ozark rivers. A variety of small aquatic animals are eaten by this small reptile.

Missouri Distribution: The stinkpot occurs throughout most of Missouri except for the northwestern third of the state.



Cooter





Western Painted Turtle



Southern Painted Turtle

Red-eared Slider Chrysemys scripta elegans

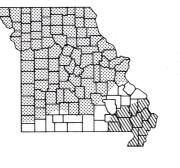
This is one of the most common semi-aquatic turtles in Missouri. The color of the upper shell is olive-brown with numerous black and yellow lines. The lower shell is vellow with a large dark brown blotch on each scute. The head and limbs are dark green with narrow black and yellow lines. A distinct red or orange stripe is normally present on each side of the head behind the eye. Old males of this species are often covered with an excess of black pigment which may obscure most of the yellow stripes on the upper shell and skin. Adult red-eared sliders range in upper shell length from 5 to 8 inches (12.5 to 20 cm). This is another species which spends much time basking in the sun on logs or rocks. Red-eared sliders may live in a variety of aquatic habitats: rivers, sloughs, oxbow lakes and manmade lakes and ponds. Both aquatic plants and animals are eaten by this species.

Missouri Distribution: Occurs statewide except for a few counties in extreme north and northwestern Missouri.

Western Painted Turtle Chrysemys picta belli

A brightly colored, small, semi-aquatic turtle with a smooth upper shell. General color is olive, olive-brown or nearly black. The upper shell normally has yellow, irregular lines and a reddish-orange outer edge. Head and legs may be dark brown or black and strongly patterned with yellow lines. Lower shell is colored yellow-orange with a prominent pattern of brown markings which follows the scute seams toward the outer edge. Adult western painted turtles range in upper shell length from 5 to 7 inches (12.5 to 18 cm). The western painted turtle spends much time basking on logs. In Missouri, this species may occur in slow-moving rivers, sloughs, oxbow lakes, ponds and drainage ditches. Habitat requirements include ample mud at the bottom, abundant aquatic vegetation, and basking sites such as logs or halfsubmerged rocks. This colorful turtle eats aquatic plants, snails, crayfish, insects and some fish. A geographic race, the southern painted turtle, Chrysemys picta dorsalis, is slightly smaller with a yellow or orange-yellow stripe down the center of the upper shell, and a plain yellow lower shell.

Missouri Distribution: The western painted turtle occurs statewide, but is replaced by the southern painted turtle (see insert) in southeastern Missouri.





Red-eared Slider



Western Chicken Turtle Deirochelys reticularia miaria

This is a small to medium-sized turtle with an ovalshaped shell and extremely long neck. The western chicken turtle is also one of the rarest species of turtle in Missouri. Coloration of the upper shell may be brown or olive, with faint, yellowish-brown lines forming a netlike pattern over the shell. The lower shell is yellow with some brown color along the scute seams. The head and limbs are brown or black with numerous yellow or yellowish-green stripes. The underside of the head and neck is plain yellow. Adult western chicken turtles range in upper shell length from 4 to 6 inches (10 to 15 cm). This species prefers still to slow-moving aquatic habitats, including swamps, river sloughs, oxbow lakes and drainage ditches. It spends much time basking in the sun on logs with its long neck stretched out. This species is known to wander about on land. Due to habitat loss, the western chicken turtle is now a rare species in our state.

Missouri Distribution: At one time it was probably common in the swamps of extreme southeastern Missouri.



Western Chicken Turtle





Blanding's Turtle



Blanding's Turtle Emydoidea blandingi

A medium-sized turtle with an oval-shaped, moderately high-domed upper shell and a long head and neck. Upper shell color may be dark brown or black with many yellow spots or bars. Lower shell is yellow with a large dark brown blotch on the outer portion of each scute and the forward third is hinged and movable. Head and limbs are brown and yellow; the chin and underside of neck are usually bright yellow. Adult Blanding's turtles range in upper shell length from 5 to 7 inches (12.5) to 18 cm). This semi-aquatic turtle may spend much of its time in shallow water along the edge of marshes, walking about on land or basking in the sun on logs. Preferred habitat includes natural marshes and river sloughs, but this species may also live in ponds and drainage ditches. Blanding's turtles eat crustaceans and a variety of aquatic insects, snails, small fish and aquatic plants. Due to limited numbers and a reduction of natural habitats, this species has been listed as endangered in Missouri.

Missouri Distribution: This turtle occurs in a few counties in extreme northeastern Missouri.

Map Turtle Graptemys geographica

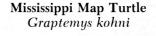
Map turtles are small to medium-sized and have a low ridge along the center of the uper shell. The hind edge of the upper shell is strongly serrated and is normally brown or olive-brown with a netlike pattern of fine vellow lines, giving the shell the appearance of a road map. Lower shell of this species is light yellow; the seams between scutes are dark brown. Head and limbs are brown with thin yellow lines. A small yellow spot is present behind the eye. Adult map turtles range in upper shell length from 7 to 10³/₄ inches (18 to 27.3 cm). Rivers, sloughs and oxbow lakes are the preferred habitats for the map turtle. This species will spend much time basking in the sun on logs or other objects, but will quickly dash into the water at the slightest disturbance. This species eats snails, naiads, crayfish and some insects. The jaws of females are adapted for cracking the shells of mollusks and crayfish (female map turtles are larger than males).

Missouri Distribution: Statewide except for the northern quarter of the state.



Map Turtle





Local Name: Sawback

This species is medium-sized, has a low ridge along the center of the upper shell, and the hind edge of the upper shell is strongly serrated. Coloration of the upper shell is brown or olive with narrow, yellow, connected circles or lines. Lower shell is greenish-yellow with several light brown lines following the seam of each scute. Coloration of the head and neck of the Mississippi map turtle is brown or greenish-gray with numerous yellow lines bordered by dark brown or black. The thick, yellow line behind each eye is crescent-shaped. Notice the "wide-eyed" or staring appearance of this species' eye. This is caused by the bright yellow eye with a round, black pupil. Adult Mississippi map turtles range in upper shell length from 6 to 10 inches (15 to 25.4 cm). This semi-aquatic species lives primarily in rivers, river sloughs and oxbow lakes or man-made reservoirs. It will often bask on logs or rocks, but is shy and will quickly drop off into the water at the slightest sign of danger. It eats both aquatic plants and animals (snails, insects, crayfish and dead fish).

Missouri Distribution: Presumed to be statewide.



Mississippi Map Turtle



J. T. Collins

Ouachita Map Turtle

Graptemys pseudogeographica ouachitensis

Local Name: Sawback

This is a small to medium-sized, semi-aquatic turtle with a prominent ridge down the center of the upper shell and bright yellow lines on head and limbs. The upper shell is brown or olive, with connected, yellow lines and circles. The rear edge of the upper shell is strongly serrated. The lower shell is plain yellow. Head and limbs are olive with numerous thin, yellow lines. There is a wide, yellow or orange-yellow marking behind each eye and a large yellow spot below each eye. Adult Ouachita map turtles range in upper shell length from 5 to 9½ inches (12.5 to 24.1 cm). This turtle lives in slow-moving rivers, sloughs, oxbow lakes and reservoirs. The food of the Ouachita map turtle includes insects, worms, crayfish, snails, naiads, dead fish and aquatic plants. A geographic race of this turtle, the false map turtle, Graptemys p. pseudogeographica, may occur in some parts of northern Missouri.

Missouri Distribution: Statewide, except for the northern quarter of the state.



Ouachita Map Turtle

Three-toed Box Turtle
Terrapene carolina triunguis

Local Name: Common Box Turtle

A small, land-dwelling turtle with a high-domed shell and normally three toes on each hind foot. Coloration of the upper shell may be plain olive or olive-brown with faint yellowish lines radiating from the center of each large scute. The lower shell has a distinct hinge across the forward third of the shell, which allows the turtle to close the lower shell up against the upper shell for protection. Coloration of the lower shell is plain vellow with some brown smudges. Head, neck and limbs may be brown or black with a varied amount of yellow and orange, depending on the age and sex of the turtle. Although most specimens have three toes on each hind foot, some individuals may have four toes per hind foot. Adult three-toed box turtles range in upper shell length from $4\frac{1}{2}$ to 5 inches (11.5 to 12.5 cm). Daily activities of this species begin with a period of feeding, followed by basking in the sun in an open area. This reptile prefers a habitat of mature oak-hickory forest with numerous openings and edge areas along brushy fields. Young box turtles eat mostly insects and earthworms, but older turtles eat a large amount of plant matter. From three to eight elongated, white eggs may be laid by a female, and one or two clutches may be laid per season. Thousands of these reptiles are killed on our roads and highways by cars and trucks.

Missouri Distribution: Statewide except for extreme northern and northwestern parts of the state.





Three-toed Box Turtle



Ornate Box Turtle Terrapene ornata ornata

A small, colorful turtle with a domed upper shell and a hinged lower shell. This is a common resident of Missouri's grasslands and native prairies. The upper shell of the ornate box turtle is normally brown with numerous vellow lines radiating from the center of each scute. The lower shell is brown with distinct yellow spots and blotches. The head and limbs are brown or black with yellow spots and blotches. There are normally four toes on each hind leg. Adult ornate box turtles range in upper shell length from 4 to 5 inches (10 to 12.5 cm). This species resides in pastures, open woods, cedar glades and prairies. Although insects make up most of this turtle's diet, a small amount of plant matter, such as berries and tender shoots, is also eaten.

Missouri Distribution: Statewide, except for the southeastern corner of the state. This turtle is more common in the western and northern parts of Missouri.





Ornate Box Turtle



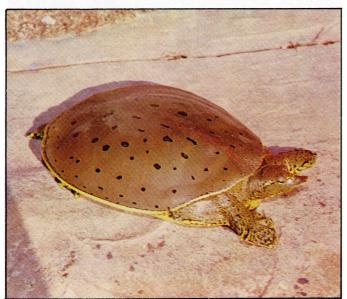
Midland Smooth Softshell Trionux muticus muticus

Local Name: Pancake Turtle

An aquatic species with a round, smooth upper shell without scutes, extensive webbing on front and hind limbs and a long, tubular snout. General coloration of upper shell varies with age and sex. Male smooth softshells and young have an olive-gray or brown upper shell with faint markings of dots and dashes. Adult females have a mottled upper shell with blotches of gray, olive or brown. The lower shell of this species is a plain cream color. Head and limbs are olive or gray above, and light gray or cream-colored below. A light yellow line bordered by black is usually present behind each eye. Adult male midland smooth softshells range in upper shell length from 5 to 7 inches (12.5 to 17.8 cm); adult females range from 7 to 14 inches (18 to 35.6 cm). This turtle resides in large rivers and streams where sand or mud is abundant, and has been found in large oxbow lakes and man-made reservoirs. Softshells eat a variety of aquatic animals including fish. Under natural conditions this species is no threat to game fish populations. This reptile is considered a game animal in Missouri, with a season and daily bag limit; consult Missouri's Wildlife Code.

Missouri Distribution: Presumed to be statewide.

Midland Smooth Softshell







Spiny Softshell (close-up)

Spiny Softshell

Eastern Spiny Softshell Trionyx spiniferus spiniferus

Local Name: Pancake Turtle

The eastern spiny softshell is a medium to large turtle with dark spots on the limbs, a small ridge on each side of the snorkel-like snout and numerous small bumps or spines on the front of the upper shell (see insert). Coloration of the upper shell varies with age and sex. Adult males and young turtles have an olive or grayish-tan upper shell with distinct, small black dots and circles and a black line along the margin. Adult females have a dark olive or tan upper shell with brown and gray blotches. The lower shell is a plain cream color. Head and limbs are normally tan or olive with small brown or black

markings. A yellow line, bordered by black, extends from the snout through the eye and along each side of the head. Adult males' upper shell length ranges from 5 to 9½ inches (12.5 to 23.5 cm); females' shell ranges in length from 7 to 17 inches (18 to 43.2 cm). This species resides in large rivers, lakes and large ponds. A muddy or sandy bottom is preferred. The eastern spiny softshell eats a variety of aquatic animals, including fish, but has not been a threat to Missouri's game fish population. This is a game animal in our state, with a season and daily bag limit; consult Missouri's Wildlife Code.

Missouri Distribution: The eastern spiny softshell is found in the eastern portion of the state, but intergrades and eventually is replaced by the western spiny softshell (*Trionyx spiniferus hartwegi*) in central and western Missouri.

MISSOURI'S TURTLES AND CONSERVATION

The term *conservation* means the wise use of our natural resources. Natural resources have to do with more than our air, water, soil, forests, minerals and energy. How many people look upon a swamp or marsh and call it a valuable natural resource? For too long, most people have not considered special wildlife habitats as something to be valued and protected from destruction.

Although turtles have been around for many millions of years, their very existence may be in

peril—not so much because of those killed by careless shooting or by a careless motorist. But we have literally taken away or permanently altered their homes—the rivers, sloughs, swamps and marshes where they have lived for countless generations. Draining the swamps and marshes for agriculture, water pollution, stream channelization, the destruction of forests and strip mining have all added to the general decline of many of our native turtles. Without their natural habitat, our turtles, as well as many other

wildlife species, are unable to reproduce and remain a part of the environment. To protect a species, especially rare and endangered ones, we have to learn their habitat requirements and protect that which is vital to their survival.

Because of lack of knowledge, people in general have looked upon aquatic turtles as a lowly group with no value and a menace to fish populations and the sport of fishing. A change in this attitude is long overdue. With public education, the facts can be presented that turtles

pose no threat to natural fish populations, that many of our species eat mostly aquatic plants and invertebrates, and that these animals have a proper place in the balance of nature. Turtles play an important role as a part of the check-and-balance system in our lakes and rivers and deserve a healthy environment and a chance to survive as much as any other creature.

Another aspect of the plight of our turtle species is the constant plundering by thoughtless people. It is unlawful to shoot turtles in Missouri, yet people continue to use the basking turtles along our rivers for target practice. Taking the life of a non-game animal for the sake of having something to shoot shows a lack of conscience and proper outdoor ethics. Another impact on Missouri's native fauna involves the killing of thousands of turtles each year by cars and trucks. Far too often, motorists deliberately run over box turtles crossing roads or highways. In a recently published article, a wildlife biologist in an Eastern state reported on a study which showed that most kinds of wildlife populations are not severely affected by road kills—with the exception of amphibians and reptiles. Please, try to avoid running over our turtles, and pass the word.

Missouri's turtle resource has also been damaged by people who take box turtles as a "souvenir" of the Ozarks and eventually, through neglect or ignorance, allows the reptiles to slowly starve to death while keeping them in their basements. Although Missourians are allowed to keep some species of wildlife as a pet without a special permit, it still is an imposition against the animal involved. If people are truly interested in keeping turtles as pets, they should take the time and trouble to learn as much as possible about the

- Shooting turtles is prohibited.
- Turtles are no threat to game fish.
- Missouri has 17 kinds of turtles; all but three are protected.
- Three kinds are considered game: common snapping turtles and two softshells, and may be taken by archery, hook and line or floating traps.
- Turtles are beneficial scavengers; they eat water plants, dead animals, snails, aquatic insects and crayfish.
- Swimmers should not fear turtles; they won't bite unless picked up.

natural history and proper captive conditions required by the reptiles. Box turtles do poorly in captivity during the winter. Most people find it better to keep a turtle during the summer and release it in early fall in the same place where it was captured. However, box turtles and our other native wildlife are much better off if left in the outdoors.

Several turtle species—softshells and the common snapping turtle are considered game animals in Missouri and are highly valued as a human food source. A valid Missouri fishing permit is required for taking the game turtles from the waters of Missouri. There is no up-to-date information on how many turtles are taken each year as game, but many people enjoy various recipes using turtle meat. Some folks enjoy softshell meat but would not consider eating snapping turtle. Others contend that there are "seven kinds of meat on a turtle." If you do not already have one, we suggest you secure a copy of Cy Littlebee's Guide to Cooking Fish and Game, published by the Missouri Department of Conservation. This book has a number of good recipes on how to prepare turtle meat.

The majority of Missouri's turtles may have a life expectancy of 15 to 30 years, but there are some exceptions: box turtles are known to live 80 to over 100 years, and a specimen of the alligator snapping turtle has lived at the Philadelphia Zoo for 62 years. The giant, island-dwelling land tortoises have been reported to live over 120 years.

It should be the concern of all Missourians to understand and appreciate the many interesting and valuable animals and plants that help to make up our outdoor heritage. This legacy is both beautiful and fragile and will take all our efforts to preserve for future generations. The Missouri Department of Conservation has long been viewed as a leader in wildlife conservation. Since the passage of the Design for Conservation, we have conducted special studies and programs to gather information on and alert Missourians to the status, value and needs of all our wild animals and native plants. It is our hope that Design for Conservation programs will result in an increased appreciation for all wildlife and have the support and understanding of all Missourians.

